STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

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Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

October 22, 1982

Mr. Robert Ruggeri
Attorney
P.O. Box 310
Moab, UT 84532

RE: Red Rock Mine Plan Review
S & S Mining Company
ACT/037/050
San Juan County, Utah

Dear Mr. Ruggeri:

The Division has completed its review of the Mining and Reclamation Plan for S & S Mining Company's Red Rock Mine received on August 30, 1982. There are several areas in which questions or comments have been raised pursuant to the Mined Land Reclamation Act, Title 40-8, UCA 1953.

These comments when adequately responded to by S & S Mining Company, should enable the the Division to proceed with the review and approval process for this operation in order to bring it into compliance with the Utah Mined Land Reclamation Act. Many areas of the review contain suggestions which may be helpful in providing the most cost effective method for development of a complete and approvable Mining and Reclamation Plan. Should any questions arise pertaining to your interpretation of the Division's response, please do not hesitate to contact Tom Tetting of my staff. Please provide the Division with an update on the current status of this project if you anticipate that your resubmission will take longer than 30 days.

Sincerely,

JAMES W. SMITH, JR.
COORDINATOR OF MINED LAND DEVELOPMENT

JWS/TNT/tck
enclosure (Mine Plan Review)

cc: Dennis Dalley, State Health
Tom Tetting, DOGM

MINE PLAN REVIEW FOR

RED ROCK MINE

S & S MINING COMPANY

ACT/037/050

SAN JUAN COUNTY, UTAH

Rule M-3(3)

Under item #13[E](4), page 3 of Form MR-2, the applicant has indicated that design calculations for constructed drainages, berms and sediment ponds can be found on page 20 of the MRP response. The Division cannot locate the calculations utilized to determine the correct size for those structures indicated. These calculations are necessary in the review to allow the Division to assess the adequacy of the proposed structures.

Will the impoundments be retaining runoff from the disturbed area and/or undisturbed area, or will they only impound discharges of groundwater from the mining operation?

If the proposed sediment ponds are not intended to handle disturbed and undisturbed area drainage, how will this runoff be controlled? Will it be routed around the surface facilities area? Will some pass through the sediment detention ponds? It is rather difficult to discern from the detail presented on the surface facilities map provided. Will any berms, diversions, check dams, straw bales or other suitable means be utilized to control surface drainage and minimize erosion?

The size of the impoundment should be based upon the volume of inflow that the structure will be expected to handle and the detention time required to settle out the suspended particulates.

With reference to Item E, page 20, Impoundment Dam - Profile & Cross-section, the Division suggests that the bottom of the pond also be lined with the bentonite mixture in addition to the inside slope of the dam embankment. This would help to deter seepage under the fill. A commitment to this, in writing, is suggested.

Rule M-3 (1) (2)

Additional acreage of disturbance must be included in the mine plan and should be supplied including: access roads (from the gate onto the mine site and up to the vent) and the proposed evaporaton pond site.

Rule M-3 (1)(h)/M-10 (6)

Please submit an analysis report of a water sample taken from the mine water discharge. This must include an examination for potential radiological contaminants as discussed during the predesign conference. The State Health Water Pollution Control Bureau should be contacted prior to sampling for recommended sampling techniques and for parameters to be analyzed.

Rule M-5

An attached bond estimate form has been developed for the operation. These costs are based upon the most current figures available to the Division for expenses the state would incur sould the liability for reclamation beincurred. The total figure in the right hand column is in current dollars, however it is customary to project this amount for the life of the mine by adding an additional inflationary cost. It may be possible to set up an escrow account to offset this further burden with earned interest from the investment. Please contact the Division as to the type of surety arrangement preferred.

Rule M-10 (6) (12)

The Division has found that revegetation of waste rock piles, where insufficient soil cover is present, has been difficult for operators to perform. For this reason, it will be to the operator's advantage to have a representative soil and/or waste rock sample analyzed for potential nutrient difficiencies. This may then bring to light any areas where soil amendments may prove beneficial and eventually provide savings in the long run for revegetation expenses by eliminating the necessity to reseed after three years (also tying up a bond for an additional time period).

How does the applicant substantiate the claim that no toxic condition will develop relating to any waste rock or overburden generated incident to this operation?

Rule M-10 (8)

This rule states that all natural channels and associated flood plains shall not be covered, restricted or rerouted unless specifically approved by the Division after a suitable hydrologic study and incorporation of sound hydraulic design.

The applicant has proposed a number of impoundment structures to be located in ephemeral drainages on the mine site. Before these structures can be approved by the Division, the applicant must demonstrate that they will not be subject to failure and are designed accordingly.

The Division recommends that the hydraulic structures utilized to control surface runoff from the disturbed and undisturbed areas be designed to safely contain or divert the peak flow generated from the 10 year-24 hour precipitation event (for temporary structures). The 10 year-24 hour storm event for this area amounts to approximately 1.8 inches of precipitation.

If the proposed sedimentation impoundment structures will be utilized to control the surface runoff and any necessary mine water discharges, the volume of the ponds must be designed accordingly.

Rule M-10 (10)

It is the Division's understanding that all shafts, tunnels, boreholes and drill holes will be plugged according to Division guildelines and Rule M-3(5). This will include backfilling of the decline and filling in of the portal with waste rock material. Please confirm this understanding with the Division.

Rule M-10 (11)

At the time of the Division's last inspection of the mine site the impounding ponds at the top of the hill were not sufficient to contain the water discharge. This indicates that an additional pond or evaporation containment unit will be necessary unless a NPDES discharge permit can be obtained from State Health. The designs of this pond must be incorporated into the mine plan and a permit number should be added to the plan. All attempts to keep the drainage routed around the waste dump and not under it must be made.

Rule M-10 (12)

The applicant states that a representative percent-cover of less than 15% was determined by measurement. However, an exact number to be used for a revegetation standard is not given. The applicant should supply the actual measurement data.

Since the postmining land use is to be grazing, a palatable species such as western wheatgrass or bluebunch wheatgrass should be added to the species list. The applicant does not indicate how seeding will be done. If the area will be broadcast seeded, the seeding rate should be doubled. This would mean a total of 14 pounds of seed per acre. It should be certified that this is 14 pounds of pure live seed per acre. If the area will be broadcast seeded and no mulch or protective cover applied, the seed should be covered by some means of raking or dragging. Please acknowledge what specific plans will be undertaken.

The applicant lists monitoring for two years as a reclamation expense. He should be aware that a minimum of three (3) growing seasons must pass before reclamation can be considered successful and the bond returned. The applicant should indicate how he will determine whether or not the success standard (see comment #1 this Rule) has been achieved.

Rule M-10 (14)

The applicant estimates that 2827 $yd^3$ of topsoil are available for reclamation and that 1-2 feet of topsoil has/will be salvaged. Further, the applicant indicates that 6-12 inches of topsoil will be redistributed.

If 1.5 feet soil us used to calculate available volume (cited by applicant) then soil would have been salvaged from approximately 1.2 acres. If one foot is used, then appproximately 1.8 acares would have been utilized to generate the volume of stored topsoil cited by the applicant.

As the operator indicated on the MR-2 form submitted on June 2, 1982, 9 acres of disturbance was anticipated. Thus at a 6 inch replacement depth the operator would require 7260 $yd^3$ topsoil while at a 1 foot depth 14,520 $yd^3$ would be required. Thus, the applicant is short between 4,433 and 11,693 $yd^3$ topsoil.

Please clarify this apparent discrepancy. This may be accomplished by providing updated calculations.

From where will the deficit topsoil requirement, if any, be made up?

Topsoil Protection

What methods will be employed to protect the stored topsoil. Will it be seeded? If berms or ditches are not necessary to protect it from erosion please explain why not.

No soil analysis has been provided. Since soils will be stored for a minimum of 8 years (if "no new reserves are encountered") it is likely that the fertility of this material will change during this period. To maximize the probability of successful revegetation the applicant should commit to test these soils prior to soil redistribution. Tests should include, but not be limited to pH, soil texture, electrical conductivity, sodium absorbtion ratio, available nitrogen, phosphorus, potassium, sodium, calcium and magnesium. These results will aid in planning for any necessary soil amendments.

How will soil, once redistributed, be prepared for seeding? Will it be disced, harrowed, etc.?